

**NITRIDE SEMICONDUCTOR SUBSTRATE AND MANUFACTURE THEREOF**

**Patent number:** JP11251253

**Publication date:** 1999-09-17

**Inventor:** OZAKI NORIYA; KIYOHISA HIROYUKI; NAKAMURA SHUJI

**Applicant:** NICHIA CHEM IND LTD

**Classification:**

- **International:** H01L21/205; H01L31/02; H01L33/00; H01S3/18

- **european:**

**Application number:** JP19980052573 19980305

**Priority number(s):**

**Abstract of JP11251253**

**PROBLEM TO BE SOLVED:** To provide a method for manufacturing a nitride semiconductor substrate having good crystallinity, and a nitride semiconductor substrate.

**SOLUTION:** By providing a first step of growing an underlaying layer 2 made of a first nitride semiconductor on a different-type substrate 1, made of a material different from a nitride semiconductor and not growing a nitride semiconductor on the surface of the underlying layer 2 or partially forming a protective film 10 which is hard to grow, a second step of growing a second nitride semiconductor 3 from the underlying layer 2 up to the top of the protective film 10 by a metal organic vapor phase growth method after the first step, and a third step of growing a third nitride semiconductor 4 having a thickness greater than that of the second nitride semiconductor 3 on the second nitride semiconductor 3 by a hydride vapor phase growth method after the second step, a crystal defect in the nitride semiconductor substrate is stopped halfway through the growth.

